CLAIMS

What is Claimed is:

1. A display illumination distribution system comprising:

a display for displaying an image;

a light pipe for distributing light waves to a display, said light pipe coupled to said display;

a lens for directing light waves into said light pipe, said lens coupled to said light pipe;

a wave guide array for directing said light waves to said lens, said wave guide coupled to said lens; and

a light source for providing said light waves, said light source coupled to said wave guide.

2. The display illumination distribution system of claim 1 wherein said display comprises a protective shield for protecting said display from physical damage; said protective shield coupled to said display.

3. The display illumination distribution system of claim 1 wherein the interior walls of each of one of said plurality of wave guides comprise a highly reflective material that reflects said light waves down the length of said wave guide.

4. The display illumination distribution system of claim 1 wherein the said light waves are confined to said wave guide array and are directed to a plurality of points at the edges of said light pipe.

5. The display illumination distribution system of claim 1 wherein said light waves are distributed from said wave guide array so that said light waves form an overlapping grid.

6. The display illumination distribution system of claim 1 wherein said light pipe is a straight through light pipe.

7. The display illumination distribution system of claim 1 wherein said light pipe includes microstructures.

8. A handheld computer display illumination distribution system comprising:

a display for displaying an image;

a light pipe for distributing illumination light waves to said display, said light pipe coupled to said display;

a lens for directing the illumination light waves and sensory light waves, said lens coupled to said light pipe;

a wave guide array for directing the illumination light waves and the sensory light waves to said lens, said wave guide coupled to said lens; and

a light source for providing the illumination light waves and the sensory light waves, said light source coupled to said wave guide.

9. The handheld computer display illumination distribution system of Claim 8 wherein said light source provides non interfering illumination light waves and sensory light waves.

10. The handheld computer display illumination distribution system of Claim 8 wherein said lens is a plurality of lenses.

11. The handheld computer display illumination distribution system of Claim 8 wherein said plurality of lenses include a distribution lens and culminating lens.

12. The handheld computer display illumination distribution system of Claim 11 further comprising:

a gathering lens for collecting said sensory light waves; and

a light detector for detecting a break in said sensory light waves, said light detector coupled to said gathering lens.

13. The handheld computer display illumination distribution system of Claim 11 wherein said sensory light is infrared light.

14. The handheld computer display illumination distribution system of Claim 11 wherein said illumination light is visible white light from a light emitting diode.

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15 A display illumination distribution method comprising the steps of

emitting light from a light source;

directing the emitted light in a wave guide;

propagating the light waves through a lens into a light pipe; and

conveying the light to a display.

16 The display illumination distribution method of Claim 15 further comprising the step of reflecting light waves off the walls of the wave guide.

17 The display illumination distribution method of Claim 15 further comprising the steps of:

emitting a portion of said light waves from said light pipe; and

conveying another portion of said light waves down said light pipe for emission at a different location in the light pipe.

18 The display illumination distribution method of Claim 15 in which two different types of light are emitted including a sensory light and a visible light.

19 The display illumination distribution method of Claim 18 further comprising the steps of:

gathering said sensory light waves in a gathering lens; and

conveying said sensory light waves to a light sensor via a wave guide.

20 The display illumination distribution method of Claim 19 further comprising the step of detecting breaks in the sensory light.